CLAIMS

What is claimed is:

1. A method of controlling a dishwasher having a washing chamber, comprising:

heating air for the washing chamber;

supplying water into the washing chamber; and

generating hot water through a heat exchange between the heated air and the supplied water.

2. The method as set forth in claim 1, wherein the water is periodically supplied when the air in the washing chamber is heated to a preset reference temperature.

3. The method as set forth in claim 1, wherein:

the heating of the air for the washing chamber is performed at each of initial stages of washing and rinsing processes; and

the washing and rinsing processes are each performed using the generated hot water.

4. The method as set forth in claim 3, wherein:

the rinsing process comprises:

two or more rinsing operations; and

a last one of the two or more rinsing operations comprises:

rinsing dishes using the generated hot water.

5. The method as set forth in claim 1, further comprising:

circulating the air in the washing chamber through a pipe, wherein the heating of the air comprises:

heating the air circulated through the pipe.

6. The method as set forth in claim 5, wherein:

the circulating of the air in the washing chamber comprises:

continuously circulating the air in the washing chamber;

the heating of the air in the washing chamber comprises:

simultaneous with the continuous circulating of the air heating the air in the washing chamber until a temperature of the air reaches a first temperature; and

the supplying of the water into the washing chamber comprises:

periodically supplying the water into the washing chamber if the temperature of the air in the washing chamber reaches the first temperature.

7. The method as set forth in claim 6, wherein the supplying of the water into the washing chamber further comprises:

periodically supplying washing water if the temperature of the air in the washing chamber reaches a preset temperature or one of a heater and a blowing fan operates for a preset time.

8. The method as set forth in claim 1, further comprising:

controlling the heat exchange between the heated air and the water supplied into the washing chamber to heat the water supplied into the washing chamber if an air generator is operated longer than a preset time.

9. The method as set forth in claim 1, further comprising:

controlling the heat exchange between the heated air and the water supplied into the washing chamber to heat the water supplied into the washing chamber as soon as an air generator is operated.

10. The method as set forth in claim 1, wherein the heating of the air comprises:

sucking outside air into the washing chamber; and

recirculating the air in the washing chamber.

11. The method as set forth in claim 1, wherein the supplying of the water comprises:

intermittently supplying the water if a temperature of the air in the washing chamber reaches a first temperature to heat the water in the washing chamber by the heated air.

12. The method as set forth in claim 1, wherein the heating of the air in the washing chamber is performed at an initial stage of the rinsing process.

13. The method as set forth in claim 1, further comprising:
rinsing dishes in a rinsing process by the heated water.

14. The method as set forth in claim 13, wherein the rinsing process is performed at least two times.

15. The method as set forth in claim 1, further comprising;
drying dishes using the heated air.

16. A method of controlling a dishwasher having a washing chamber, comprising:
heating air in the washing chamber;
supplying water into the washing chamber;
circulating the heated air to provide a heat exchange from the heated air to the supplied water; and
washing dishes using heated water.

17. A method of controlling a dishwasher having a washing chamber, comprising:
heating air in the washing chamber;
supplying water into the washing chamber; and
circulating the heated air to provide heat exchange from the heated air to the supplied water, the air having a specific heat lower than that of the water.

18. A method of controlling a dishwasher having a washing chamber, comprising:
heating air in the washing chamber; and

drying dishes in the washing chamber only using the heated air.

19. A method of controlling a dishwasher having a washing chamber, comprising:

heating air in the washing chamber using a heater; and

supplying water into the washing chamber and generating hot water through heat exchange between the heated air and the supplied water, the heater not being submerged under the supplied water.

20. A method of controlling a dishwasher having a washing chamber and an air generator that provides hot air into the washing chamber, comprising:

starting supplying of water into the washing chamber;

operating the air generator and heating the supplied water and the air in the washing chamber;

stopping the supplying of water and operating the air generator if a preset variable corresponding to a property of the washing chamber exceeds a first value; and

starting the supplying of water if the preset variable of the washing chamber exceeds a second value.

21. The method as set forth in claim 20 wherein the starting of the supplying of the water occurs at a common time with starting of one of washing and rinsing processes.

22. The method as set forth in claim 20, wherein:

the first value is a temperature of the water in the washing chamber; and

the reference value is a temperature of the air in the washing chamber.

23. The method as set forth in claim 20, wherein the first value is more than 60°C.

24. The method as set forth in claim 20, wherein:

the first value is an average time required for a temperature of the water in the washing chamber to reach a preset temperature; and

the second value is an average time required for a temperature of the air in the washing chamber to reach a preset temperature.

25. The method as set forth in claim 24, wherein:
the first value ranges from about 15 to 25 minutes; and
the second value ranges from about 5 to 10 minutes.

26. The method as set forth in claim 1, further comprising:
when heating both of the air and of the supplied water, simultaneously, operating a fan to circulate the air, a heater to heat the air and a water supply pump to supply the water; and
when heating only the air in the washing chamber, operating only the fan and the heater.

27. The method as set forth in claim 1, further comprising:
controlling the dishwasher to allow a heat exchange between the heated air and water fed into the washing chamber in response to an operation of an air generator for a period of time equal to or exceeding a predetermined time period to heat the water fed into the washing chamber.

28. The method as set forth in claim 1, further comprising:
controlling the dishwasher to allow a heat exchange between the heated air and water fed into the washing chamber in response to a start of an operation of an air generator to heat the water fed into the washing chamber.

29. The method as set forth in claim 1, further comprising:
performing a main washing process comprising:
if a temperature of the air in the washing chamber is increased by a predetermined amount, periodically supplying the water into the washing chamber and then heating the water by the heated air,
determining whether a water level of the water reaches a preset water level;

if the water level of the washing water reaches the preset water level, stopping the supplying of the water, while continuously heating and circulating the air in the washing chamber,

if a temperature of the water reaches a preset temperature, stopping the heating and circulating of the air and circulating the water supplied, and

if a preset washing time elapses, stopping the main washing process.

30. The method as set forth in claim 1, further comprising:

performing a rinsing process comprising:

if a temperature of the air in the washing chamber is increased by a predetermined amount, supplying the water into the washing chamber and then heating the water by the heated air in at least a last operation of the rinsing process,

determining whether a water level of the water reaches a preset water level;

if the water level of the washing water reaches the preset water level, stopping the supplying of the water, and performing the last operation of the rinsing process, and

if a rinsing time reaches a preset period, stopping the heating and circulating of the air in the washing chamber and discharging the water supplied.

31. The method as set forth in claim 1, wherein the generating of hot water comprises:

increasing a temperature of the generated hot water by simultaneously performing the heating of the air in the washing chamber and the supplying of the water;

stopping the supply of the water, if the temperature of the water in the washing chamber reaches a first target temperature to accelerate a rate of temperature change of the heated air;

restarting the supply of the water, if the temperature of the heated air in the washing chamber reaches a second target temperature to decrease the temperature of the air in the washing chamber.

32. The method as set forth in claim 1, wherein the supplying of the water comprises:

periodically supplying the water according to one of the air temperature in the

dishwashing chamber reaching a preset temperature and of a heater and a fan operating for a preset period.

33. The method as set forth in claim 1, wherein the heating of the air comprises:

one of sucking external air into the washing chamber and recirculating internal air from within the washing chamber to heat the air.

34. The method as set forth in claim 5, wherein:

the circulating of the air is continuous;

the heating is simultaneous with the circulating of the air until an air temperature in the washing chamber reaches a first temperature; and

the supplying of the water comprises:

periodically supplying the water if the air temperature in the washing chamber reaches the first temperature.

35. A dishwasher having a washing chamber, comprising:

an air generator to heat air for the washing chamber, and comprises:

a blowpipe to circulate the air of the washing chamber,

a heater provided in the blowpipe to heat the air which is circulated through the blowpipe, and

a fan to suck the air from the washing chamber into an end of the blowpipe,

wherein water is periodically supplied into the washing chamber when one of an air temperature in the washing chamber reaches a preset temperature and of the heater and the fan operate for a preset time.

36. The dishwasher as set forth in claim 35, further comprising:

a control unit supplying the water into the washing chamber and generating hot water through a heat exchange between the heated air and the supplied water, when the air generator is operated longer than a preset time.

37. The dishwasher as set forth in claim 35, further comprising:

a control unit supplying the water into the washing chamber and generating hot water through a heat exchange between the heated air and the supplied water, as soon as the air generator is operated.

38. The dishwasher as set forth in claim 35, further comprising:

a control unit controlling a heat exchange between the heated air and water supplied into the washing chamber to heat the water supplied thereto, when the air generator is operated longer than a preset time.

39. The dishwasher as set forth in claim 35, further comprising:

a control unit controlling a heat exchange between the heated air and water supplied into the dishwashing chamber to heat the water supplied thereto as soon as the air generator is operated.

40. The dishwasher as set forth in claim 35, further comprising:

a control unit supplying water into the washing chamber and generating hot water through a heat exchange between the heated air and the supplied water such that the air in the washing chamber is continuously circulated and is heated, simultaneously, until an air temperature in the washing chamber reaches a first temperature, and if the air temperature in the washing chamber reaches the first temperature, the water is periodically supplied to the washing chamber.